As a general practice, the surveyor should check with the curb, gutter, curb and gutter, or concrete barrier wall contractor for paver limitations or requirements and for the preferred offset before beginning to stake. Offsets may be either to the center of barrier, back of curb, face of curb, or flange. Note most radii are to face or flange of curb and must be taken into account for offsets. Grades may be referenced to either to the top of barrier, top of curb, flange/flag, or string line with special attention given to point of curvature (PC), mid-point of curves, point of tangency (PT), high points, low points, and flumes. Grades and offsets must be used consistently throughout the project and the contractor must be informed accordingly.

Stakes for the construction of these items are usually set out two or three feet from the form line, unless the curb, gutter, curb and gutter or concrete barrier wall contractor prefers otherwise. This distance depends on the equipment and methods used. Normally, stakes are set at 50-foot intervals for rural sections. However, urban sections and short radius curves may require stakes at 25-foot intervals. Refer to plans and specifications for project intervals. Grade for these items is shown by driving a hub and marking the side of the guard stake. Accuracy in these stakes, grade and line, is critical for drainage.

Concrete barrier staking is a similar operation to curb, gutter, and curb and gutter staking. The same staking procedures are followed. This section does not include retaining wall staking.

7-30.1 Suggested Procedure

The staking contractor must always consult with the curb, gutter, curb and gutter or concrete barrier wall contractor and check with engineer for changes to the approved plans before doing any staking or grade computations.

The surveyor should follow these steps when staking curb, gutter, curb and gutter, or barrier wall:

1. Re-establish the centerline from control points, if necessary.
2. Determine curb, gutter, curb and gutter, or concrete barrier wall offset.

   Check with the curb, gutter, curb and gutter, or concrete barrier wall contractor for desired stake offset and for barrier wall, the actual desired stake location. This should remain consistent throughout the project.
3. Locate or compute curb, gutter, curb and gutter, or concrete barrier wall grades from the plan.

   For curb, gutter, or curb and gutter refer to:

   - Construction details for item (type, width, etc.).
   - Computed grades for elevations on plan or matching into existing pavement.
   - Typical sections for plan location.

   For barrier wall:

   - Construction details for wall dimensions.
   - Pavement grades for elevations.
   - Typical sections for plan locations.
4. Set tacked hub at predetermined interval and offset. Permanent marker may be used in lieu of tack.
5. Establish elevation on the top of the tacked hubs.
6. Compute fill or cut to required elevation.
7. Mark guard stake accordingly, as shown in Figure 1.
   - Station and offset of stake.
   - Offset from stake to item and identify location referenced, for example back of curb.
   - Cut or fill to referenced elevation.
8. Be sure to keep neat and accurate field notes of work being performed, as shown in Figure 2.

   Refer to CMM 7-15 for general field note information.

Figure 1 Labeling of Curb Stakes

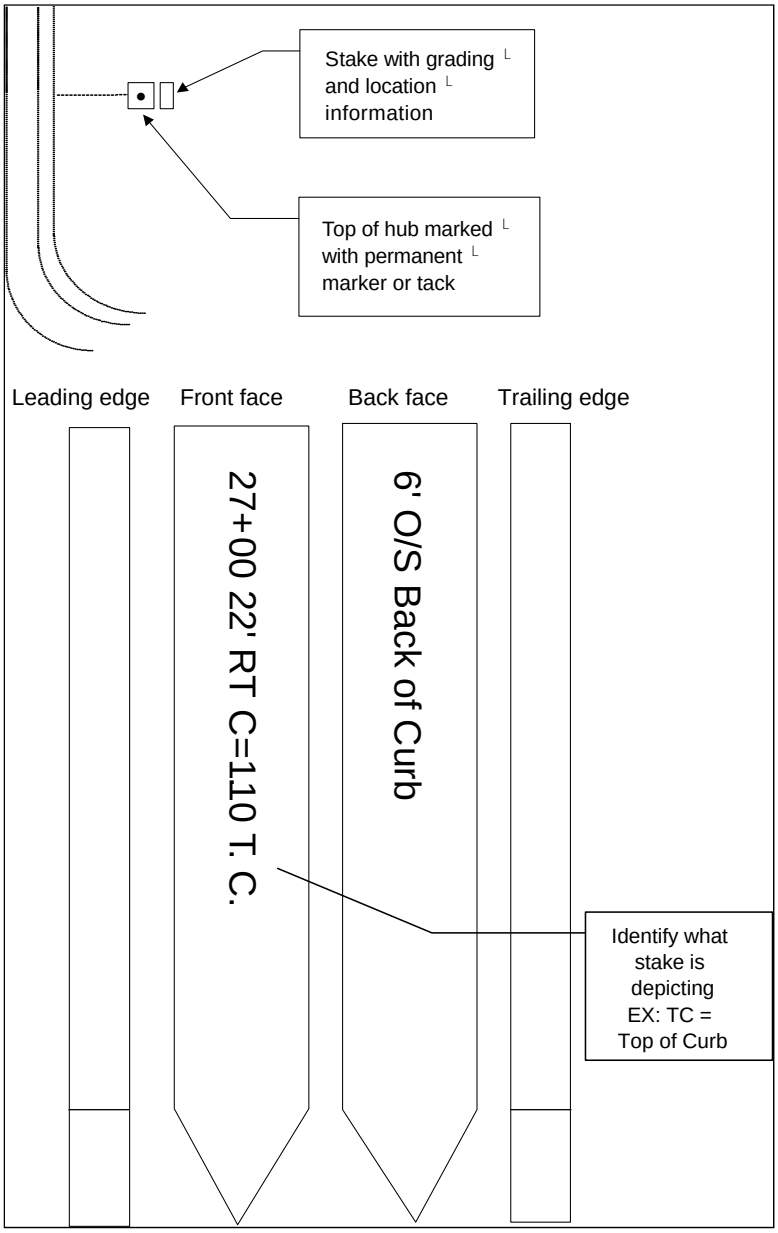
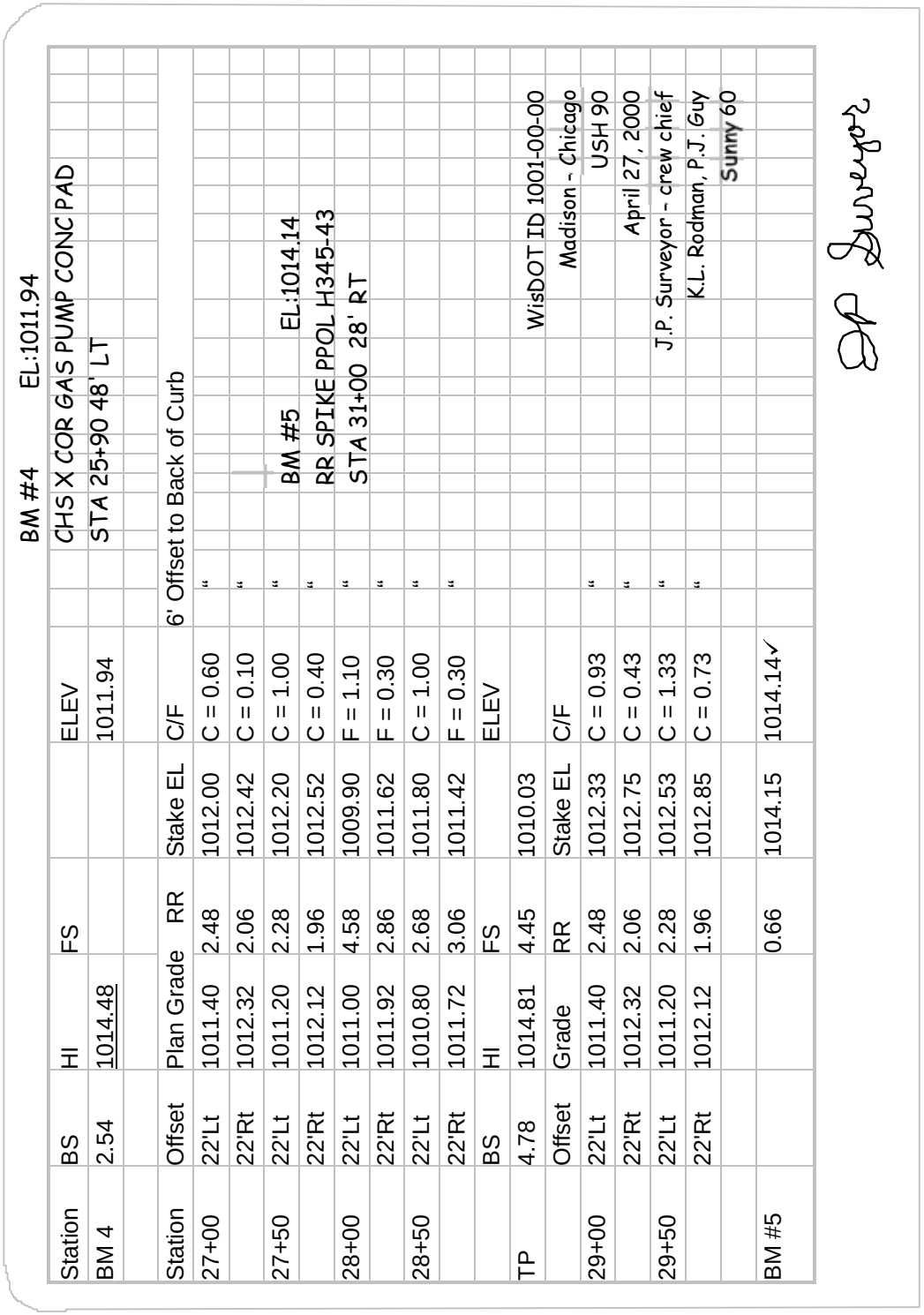


Figure 2 Example Curb, Gutter, or Curb and Gutter Field Notes



Station	BS	HI	FS		ELEV
BM 4	2.54	1014.48			1011.94

Station	Offset	Plan Grade	RR	Stake EL	C/F
27+00	22'Lt	1011.40	2.48	1012.00	C = 0.60
	22'Rt	1012.32	2.06	1012.42	C = 0.10
27+50	22'Lt	1011.20	2.28	1012.20	C = 1.00
	22'Rt	1012.12	1.96	1012.52	C = 0.40
28+00	22'Lt	1011.00	4.58	1009.90	F = 1.10
	22'Rt	1011.92	2.86	1011.62	F = 0.30
28+50	22'Lt	1010.80	2.68	1011.80	C = 1.00
	22'Rt	1011.72	3.06	1011.42	F = 0.30
	BS	HI	FS		ELEV
TP	4.78	1014.81	4.45	1010.03	
	Offset	Grade	RR	Stake EL	C/F
29+00	22'Lt	1011.40	2.48	1012.33	C = 0.93
	22'Rt	1012.32	2.06	1012.75	C = 0.43
29+50	22'Lt	1011.20	2.28	1012.53	C = 1.33
	22'Rt	1012.12	1.96	1012.85	C = 0.73
BM #5			0.66	1014.15	1014.14✓